HENP GC Workshop,
17 June 1998
(preceeding RCF meeting, 18-19 June)
Brookhaven National Lab

(Bldg. 510, Room 2-160)
(visitor's info)

The primary goals of this workshop are:

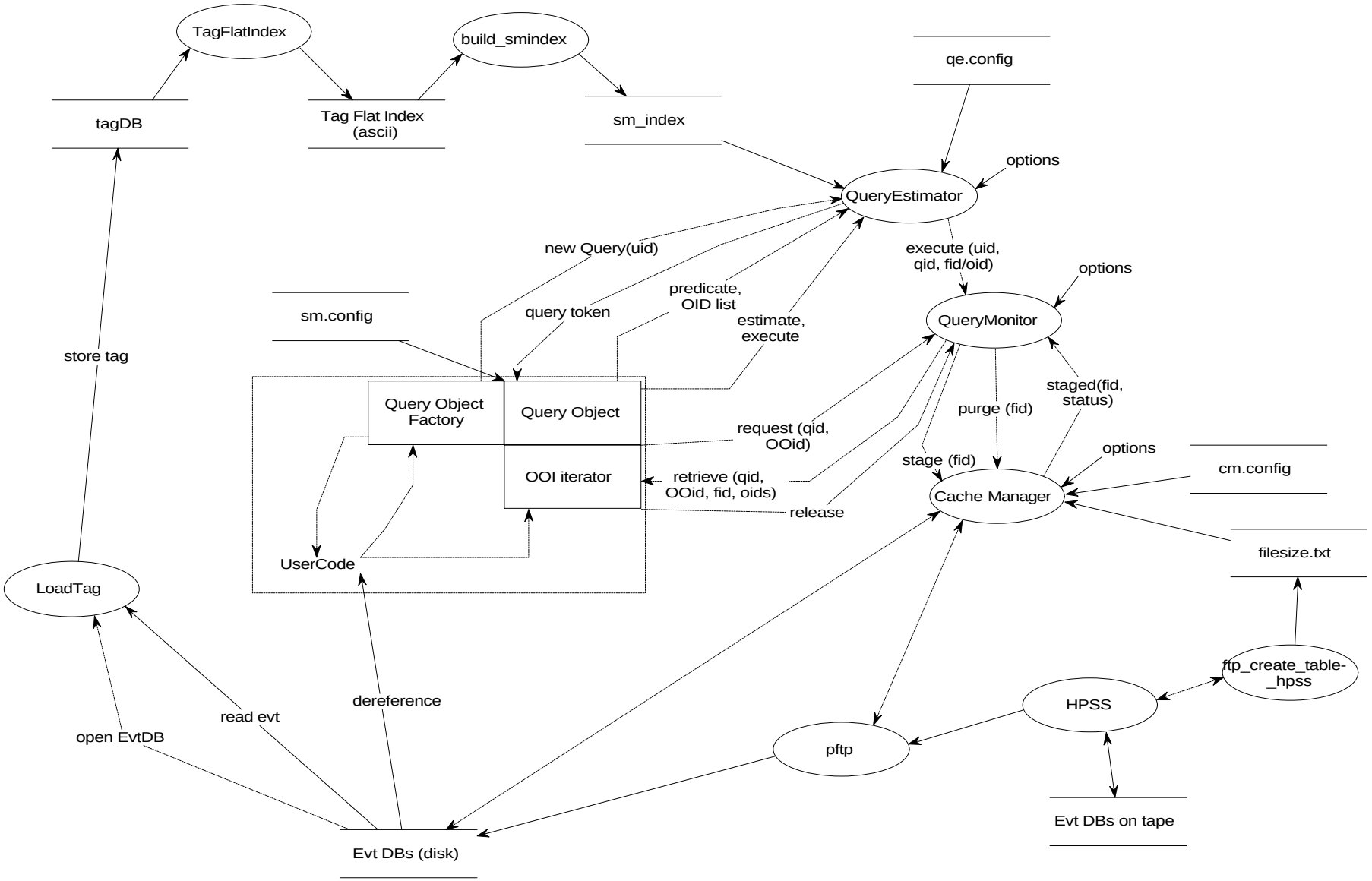
- Describe GC s/w machinery & features to RHIC audience (including demo)
- Discuss detailed goals of MDC1 relating to the GC software
- Planning for MDC1 & MDC2 (including interface to analysis code)

Agenda:

Wednesday, 17 June 1998

Time	Topic	Speaker / discussion coordinator
9:30	News / status	Doug O.
10:00	Intro & Description of sm components current status	Arie, Henrik, Luis, Alex
10:45	Description of user code current status	Dave M.
11:30	demo	Dave M, ...
12:00	lunch	
1:30	MDC1 goals	Doug O.
	GC measurements	Dave M., Arie S.
2:30	Interface to analysis code	
	tagDB	Dave Z.
	event components	Torre
	staf	Doug / Jeff
4:00	Short term schedule	Doug O.
4:30	discuss code development issues	all
5:00	adjourn to Brookhaven Center	all

Diagram of present GC components



Load Tag scenario

Load tagDB

Description

Select EvtDB

open EvtDB

Scan

Iterate oParticles

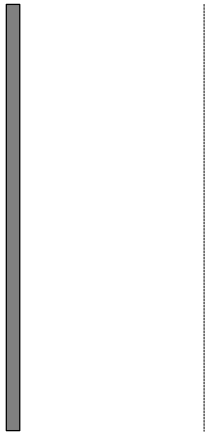
read event

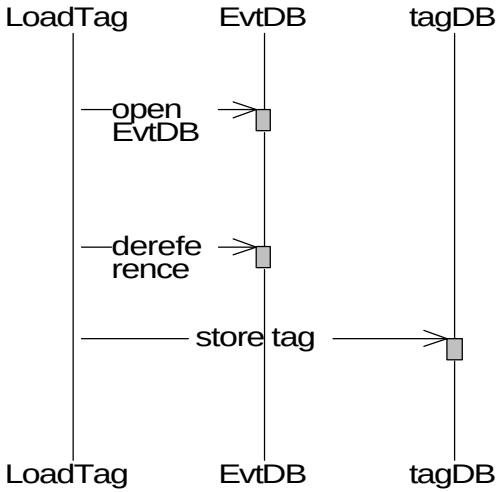
compute tag

store tag

End Iteration

End EvtDB





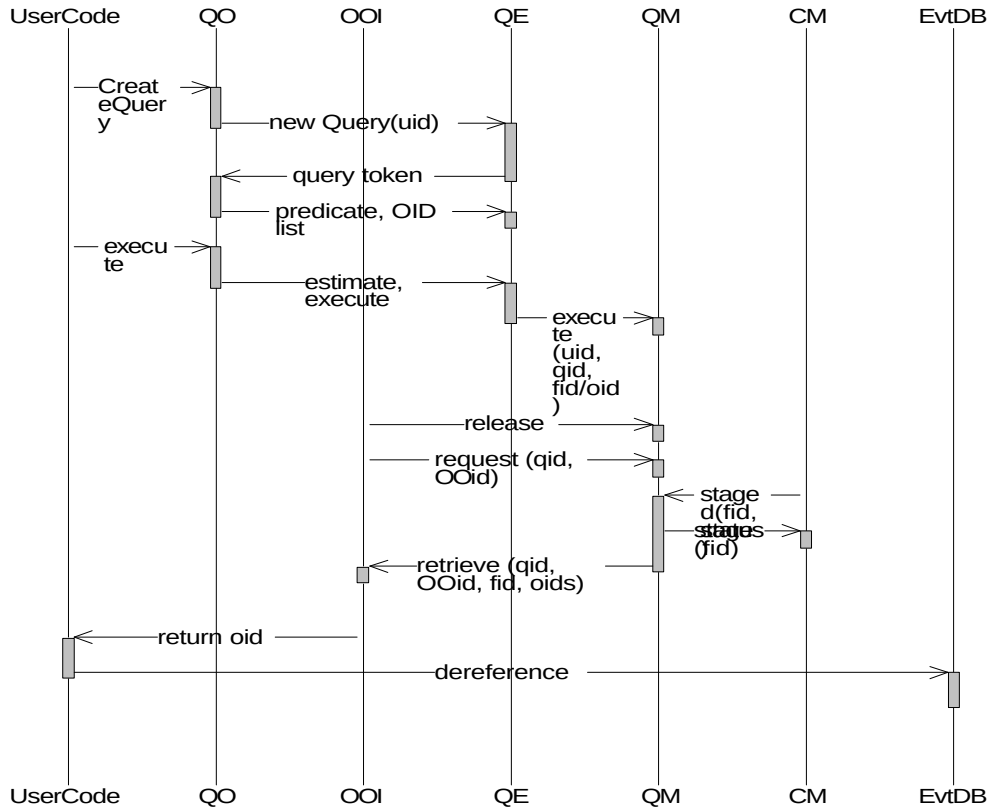
Query Execution Scenario

Query Execution

Description

New Query
- create query object
- bind to qe and register new query object
- query token is returned
- issue predicate
- user decides to execute
- execute query
- qe tells qm to execute qid
- iterate over query results
  - next
    - release previous file
    - request oid sublist
      - file is staged
      - stage file
    - retrieve oid sublist
  - return next
  - return oid ref
  - retrieve this event and process it
- End Iteration

End Query



MDC1 Goals & Tests

From RCF Progress Report, June 4, 1998

The following three primary goals have been established for MDC-1:

1. Demonstrate the ability to simultaneously record data from more than one experiment in the robotic storage system at 10% of nominal recording rates

2. Demonstrate the ability to simultaneously reconstruct the data of more than one experiment with efficient use of resources

3. Measure the relative effectiveness of multi-query optimized data mining to single query data mining using:

   a) Grand Challenge software for STAR & PHENIX

   b) Non-Grand Challenge software for PHOBOS & BRAHMS

The above goals will be accomplished using Objectivity where it is desirable and proves to be practical.

While not primary goals, there are a number of additional aspects to the exercise, which would be very valuable if accomplished during MDC-1. For RCF itself these include:

1) Simultaneously recording raw data and reconstructing previously recorded raw data (meeting primary goals 1 & 2 above at the same time).

2) Simultaneous with recording and reconstructing raw data also perform data mining on previously reconstructed data (meeting all three primary goals at the same time).

3) Demonstrating extended periods (multiple days or even weeks) of production running in the various modes so as to develop time averaged performance measurements and statistics on less frequent failure modes of components and subsystem.

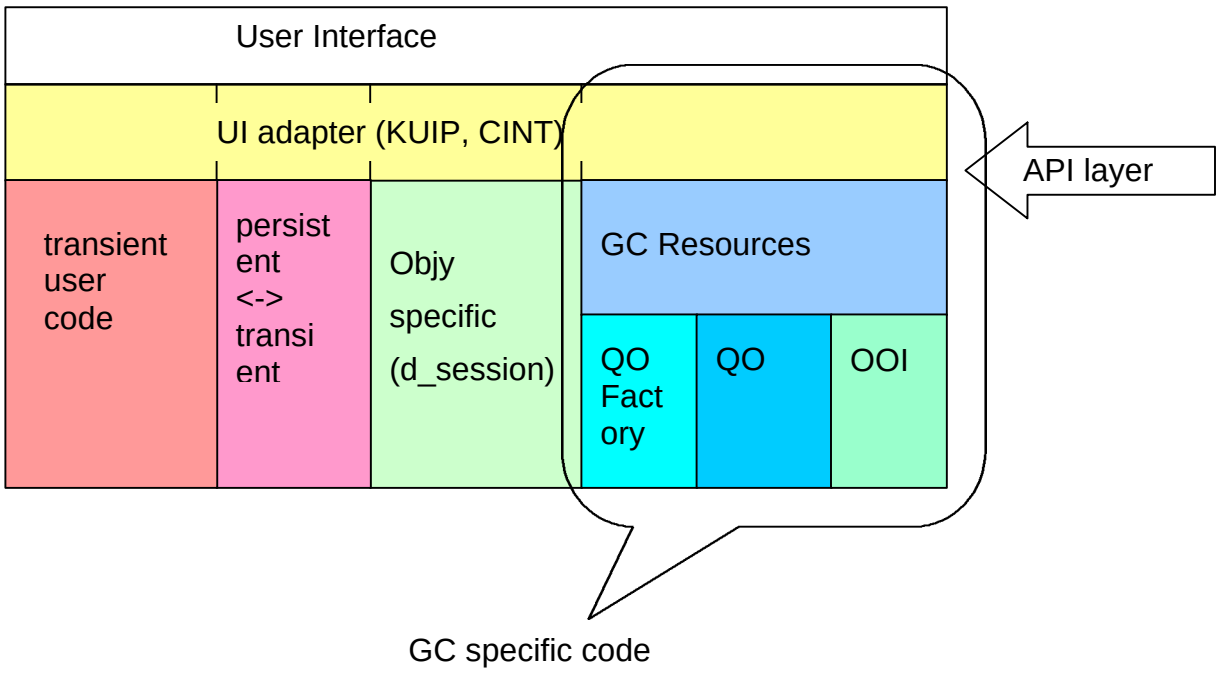
MDC1 Goals & Tests

- What are the measurements and comparisons to be made?
- Need to define the scenario's for these
    1. how many of what files
    2. what queries
    3. what analysis codes
    4. what caching policies

Laundry list of things to monitor & measure

Users
query token
events in query
DB files openned (r, u), time
Containers openned (r, u), time
Object classes (r, u)
object de-reference time
object bytes read
pages read
bytes used in user code (from get/set methods?)

GC code / Objectivity Interface to analysis code (StAF, ROOT)



Near-term schedule tasks

1. Robustness of Orbix/Omnibroker (anything to do?)
2. connect gc resources to real user code
3. put in logging
4. analyze log data
5. define MDC scenarios
6.
7.
8.